

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-ANE-45-AD]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney JT8D Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Supplemental notice of proposed rulemaking; reopening of comment period.

SUMMARY: This notice revises an earlier proposed airworthiness directive (AD), applicable to Pratt & Whitney JT8D series turbofan engines, that would have required a one-time visual and eddy current inspection of certain stage 3-4 low pressure compressor (LPC) disks and stage 7-12 high pressure compressor (HPC) disks identified by part number and serial number, for arc burns in tie rod, shielding, and pressure balance holes, and, if necessary, repair of tie rod holes. That proposal was prompted by reports of improper fixturing during the electrolytic cleaning process of certain compressor disks at a certified repair station, Avial or Greenwich Air Services, currently GE Engine Services Dallas LP, certificate number RA1R445K of Dallas, Texas, that can result in damage to the disks in the form of arc burns. This action revises the proposed rule by adding a drawdown schedule for removal of affected disks. The actions specified by this proposed AD are intended to prevent compressor disk cracking from arc burns in tie rod holes, shielding holes, or pressure balance holes, which could lead to a fracture of a compressor disk, resulting in uncontained release of engine fragments, inflight engine shutdown, and airframe damage.

DATES: Comments must be received by [Insert date 60 days after date of publication in the **Federal Register**].

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 97-ANE-45-AD, 12 New England Executive Park, Burlington, MA 01803-5299.

Comments may also be sent via the Internet using the following address:

"9-ad-engineprop@faa.dot.gov". Comments sent via the Internet must contain the docket number in the subject line. Comments may be inspected at this location between 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from GE Engine Services - Dallas LP, 9311 Reeves St., Dallas, TX 75235-2095. This information may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: Christopher Spinney, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7175, fax (781) 238-7199.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 97-ANE-45-AD." The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 97-ANE-45-AD, 12 New England Executive Park, Burlington, MA 01803-5299.

Discussion

A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to add an airworthiness directive (AD), applicable to Pratt & Whitney (PW) JT8D series turbofan engines, was published as a notice of proposed rulemaking (NPRM) in the **Federal Register** on January 22, 1998 (63 FR 3483). That NPRM would have required, at the next shop visit after the effective date of the AD, a one-time visual and eddy current inspection of compressor disks to detect arc burn damage and if appropriate, repair of damaged area. That NPRM was prompted by a report of certain low pressure compressor (LPC) and high pressure compressor (HPC) disks, installed on PW JT8D series turbofan engines, that were improperly fixtured during the electrolytic cleaning process at a certain repair station. That improper fixturing can lead to damage to compressor disks in the form of arc burns. Arc burns can degrade disk material properties and create a stress concentration that results in premature cracking of a disk and subsequent failure. That condition, if not corrected, could result in compressor disk cracking from arc burns in tie rod holes, shielding holes, or pressure balance holes, which could lead to a fracture of a compressor disk, resulting in uncontained release of engine fragments, inflight engine shutdown, and airframe damage.

Since the issuance of that NPRM, the FAA received a comment from the manufacturer stating that a drawdown schedule for removal of affected disks should be added to the proposed rule to maintain an acceptable level of safety, instead of requiring the inspection at the next shop visit. The FAA concurs and has added a drawdown schedule of 3,000 cycles in service (CIS) after the effective date of this AD, or the next shop visit, whichever occurs first.

Since this change expands the scope of the originally proposed rule, the FAA has determined that it is necessary to reopen the comment period to provide additional opportunity for public comment.

There are a total of 1,388 compressor disks exposed to improper fixturing during the electrolytic cleaning process. The FAA estimates that 1,054 of these disks currently remain in service in the worldwide fleet, which represents approximately 210 engines. The FAA also estimates that 840 of the disks affected by the proposed AD are installed in engines installed on aircraft of U.S. registry. It will take approximately 30 work hours to accomplish the proposed actions per disk, and that the average labor rate is \$60 per work hour. Required parts would cost approximately \$23 per disk. Based on these figures, the total cost impact of the proposed AD on U.S. operators is estimated to be \$1,531,320.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption "ADDRESSES."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

Pratt & Whitney: Docket No. 97-ANE-45-AD.

Applicability: Pratt & Whitney (PW) JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, -17AR, -209, -217, -217A, -217C, and -219 model turbofan engines which have a compressor disk installed identified by part number and serial number in Table 1 of this airworthiness directive (AD). These engines are installed on but not limited to Boeing 727 and 737 series, and McDonnell Douglas DC-9 and MD80 series aircraft.

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent compressor disk cracking from arc burns in tie rod holes, shielding holes, or pressure balance holes, which could lead to a fracture of a compressor disk,

resulting in uncontained release of engine fragments, inflight engine shutdown, and airframe damage, accomplish the following:

- (a) Within 3,000 cycles in service (CIS) after the effective date of this AD, or the next shop visit, whichever occurs first, remove, visually inspect, eddy current inspect, and repair or replace with a serviceable part disks identified by part number (P/N) and serial number (S/N) in Table 1 of this AD in accordance with GE Engine Services - Dallas, LP, Engineering Bulletin (EB) JT8D-025, dated March 27, 1998. The next shop visit must occur by [insert 10 years from AD effective date]

TABLE 1

STAGE	P/N	S/N
3	745803	H13469
3	745803	N48096
3	745803	N48361
3	745803	P77936
3	745803	P77942
3	745803	P78298
3	745803	P98041
3	745803	P98334
3	745803	R18766
3	745803	R18989
3	745803	R19227
3	745803	R73555
3	745803	R74156
4	745704	2A3332
4	745704	2A4258
4	745704	G51920
4	745704	H04195
4	745704	J46788
4	745704	J76639
4	745704	K11388
4	745704	K11483
4	745704	K12946
4	745704	K52509
4	745704	K53069
4	745704	L60864
4	745704	L61145

4	777704	B114AA0034
4	777704	B114AA0178
4	777704	B114AA0274
4	777704	BBDUA14597
4	777704	BBDUAH4675
4	777704	BBDUAH7390
4	777704	J77499
4	777704	J94590
4	777704	K43182
4	777704	L81216
4	777704	L81217
4	777704	L81218
4	777704	L81224
4	777704	L81688
4	777704	M40670
4	777704	M44376
4	777704	M44384
4	777704	M53723
4	777704	M53753
4	777704	M53810
4	777704	M53815
4	777704	N30898
4	777704	N30938
4	777704	N30943
4	777704	N30947
4	777704	N30956
4	777704	N53261
4	777704	N53280
4	777704	N53284

4	777704	N53290
4	777704	N53296
4	777704	N53299
4	777704	N53309
4	777704	N53317
4	777704	N53324
4	777704	N53337
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4	777704	N53347
4	777704	N53355
4	777704	N53356
4	777704	N53361
4	777704	N53364
4	777704	N53366
4	777704	N53373
4	777704	N53388
4	777704	N53390
4	777704	N53392
4	777704	N53397
4	777704	N53402
4	777704	N53405
4	777704	N53407
4	777704	N53409
4	777704	N53411
4	777704	N53413
4	777704	N53416
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4	777704	N53426
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4	777704	N53438
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4	777704	N63637
4	777704	N63646
4	777704	N63651
4	777704	N63696
4	777704	N63704
4	777704	N63718
4	777704	N63736
4	777704	N63740
4	777704	N63745
4	777704	N63803
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12	798512	T19292
12	798512	T19314
12	798512	T28638
12	798512	T43059

(b) For the purpose of this AD, a shop visit is defined as an engine removal, where engine maintenance entails separation of pairs of major mating engine flanges or the removal of a disk, hub, or spool regardless of other planned maintenance except where the maintenance performed is being done in lieu of performing the maintenance on wing.

(c) The accomplishment of the inspections and repairs specified in this AD must be performed at GE Engine Services - Dallas, LP., certificate number RA1R445K of Dallas, Texas. Operators wishing to use another facility to perform the required inspections and repairs must apply for an alternative method of compliance in accordance with paragraph (e) of this AD.

(d) Report the following information on a monthly basis to the Manager of the Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803-5299; fax (781) 238-7199, Internet: Mark.C.Fulmer@faa.dot.gov. Reporting requirements have been approved by the Office of Management and Budget and assigned OMB control number 2120-0056:

(1) S/N of engines inspected in accordance with paragraph (a) of this AD
(2) S/N of engines found with arc burns and approximate size of the arc burn.
(3) S/N of engines repaired in accordance with paragraph (a) of this AD.
(4) Hours and CIS since last shop visit and total hours and CIS of disks inspected in accordance with paragraph (a) of this AD.

(5) Report to the Manager of the Engine Certification Office, within two business days of finding one of the following conditions as a result of inspecting a disk in accordance with paragraph (a) of this AD:

(i) A crack depth of more than 5 mils.
(ii) More than 2 tie rod holes with cracks.
(iii) Arc burn depth beyond 9 mils.
(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office. Operators shall submit their request through an appropriate

FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Engine Certification Office.

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection requirements of this AD can be accomplished.

Issued in Burlington, Massachusetts, on May 7, 1998.

Thomas A. Boudreau,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.